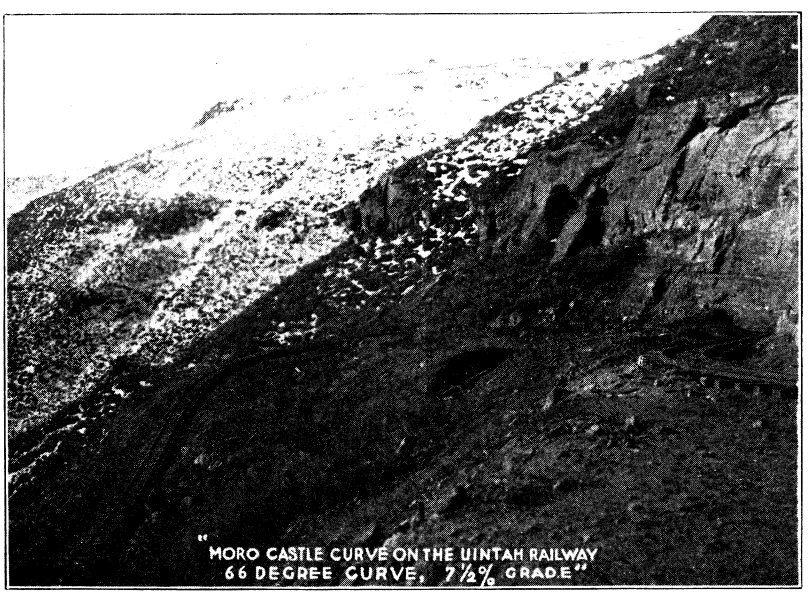
AUGUST, 1911

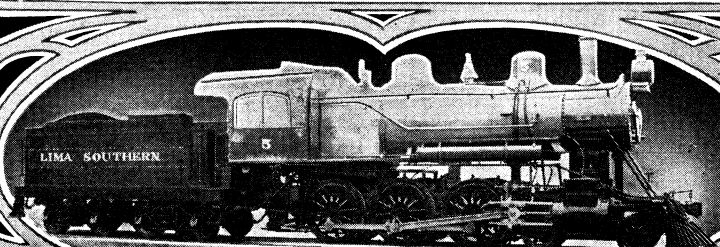
THE LOCOMOTIVE WORLD

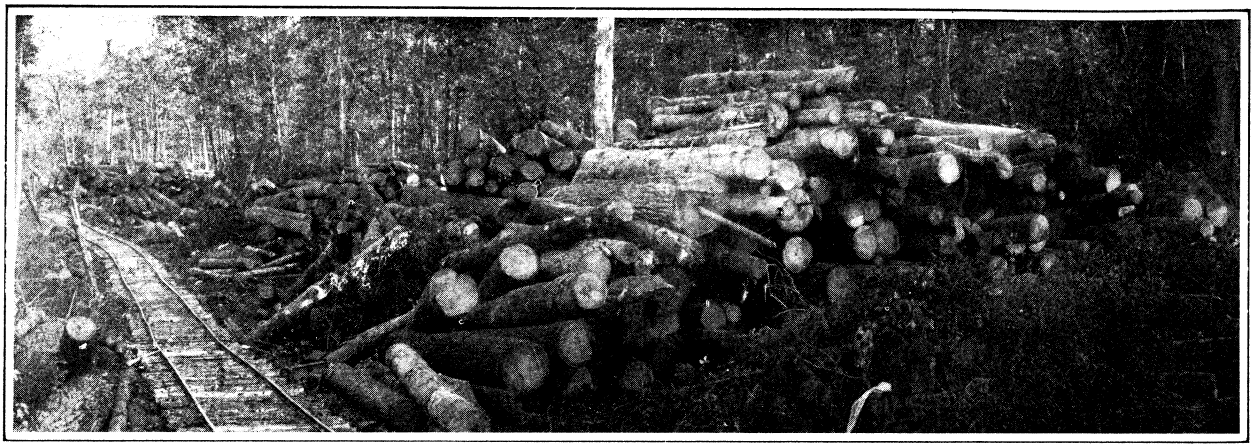
LOGGING — MINING

PLANTATION — INDUSTRIAL & STANDARD RAILROAD — MOTIVE POWER



"MORO CASTLE CURVE ON THE UINTAH RAILWAY
66 DEGREE CURVE, 7½% GRADE"





DECKING LOGS HIGHER means skidding them from a greater distance, consequently requiring less track building, which costs money.

High decking also increases the daily capacity, because necessitating fewer moves, less time is consumed in moving. The

Clyde Self-Propelling Steam Skidder with "out-haul" system

takes the skidding line back to the logs at a speed of 800 to 1000 feet per minute, which further increases the capacity of each line.

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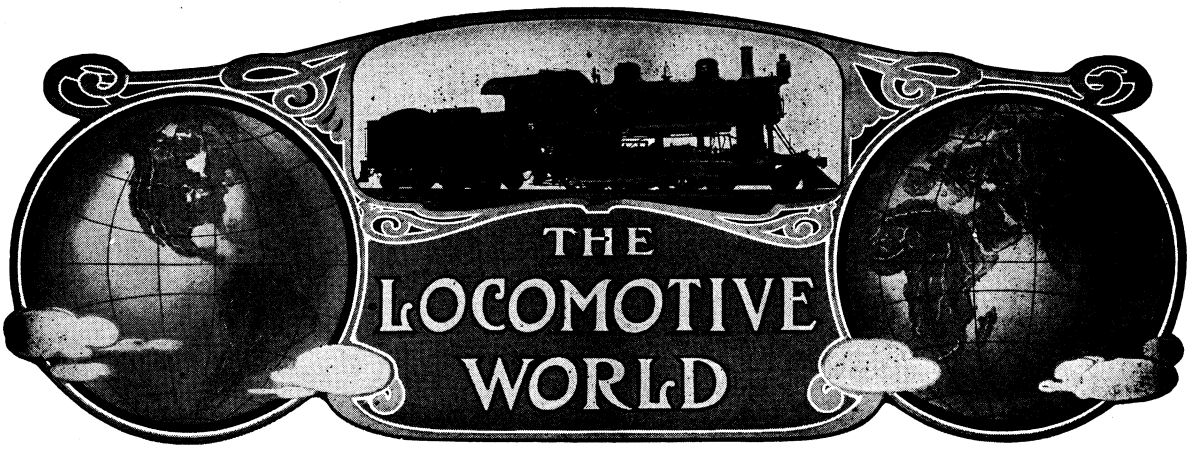

VOLUME 4 AUGUST, 1911 NUMBER 4

THE LOCOMOTIVE WORLD.

PUBLISHED MONTHLY BY

THE FRANKLIN TYPE AND PRINTING COMPANY

H. C. HAMMACK, EDITOR

210 N. ELIZABETH ST., LIMA, OHIO.

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NOTICE TO ADVERTISERS.

Advertising rates fusnished upon application. Change in advertisements intended for a particular issue should reach the office of the Locomotive World no later than the 20th of the month prior to the date of issue. New advertisements requiring no proof can be received up to the 1st of the month of date of issue.

THE FRANKLIN TYPE AND PRINTING COMPANY

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FLANGE WEAR

THERE is probably not another one thing which causes the private railroad owners any more trouble than that of flange wear to drivers of their locomotives. The reason for this is due no doubt on account of the fact that the majority of private railroad lines contain many sharp curves, which cause the flanges to wear much faster than if locomotives are operating on straight track. Our trunk railroads in laying out their lines keep from encountering curves as much as possible, not only on account of the flange wear on drivers, but also for the reason that curves cause resistance which means loss in power, cause greater wear and tear on all rolling stock and make the operating of the road more dangerous. However, many of these reasons cannot be considered by the private railroad owner, as if he did he would increase the cost of the construction of his road to such a figure that would make it an unprofitable investment. It, therefore, behooves the owners of private railroads to devise some method to prevent the cause which is giving him trouble, in some other manner.

There are two classes of expense due to excessive flange wear. One results from the metal lost in producing standard flanges after they have been badly worn and the other is due to the loss of revenue and the cost of repairs when necessary to turn or remove tires from flange wear between regular shoppings of the engine.

At the last Master Mechanic's Association meeting the committee on "Flange Lubrication" reported that out of thirty railroads to which a circular of inquiry was issued, there were only two which stated they were not having trouble from this source. Their report shows that on a certain road, before adoption of flange lubrication, Atlantic type locomotives averaged 18600 miles between tire turnings before reaching the limit of 1-inch vertical flange wear. Since the adoption of flange lubrication, the same locomotives average 60,400 miles between tire turnings for tread wear. This goes to show

plainly that if flange lubrication will make such a difference in the wear of tires as this on a trunk line railroad where the maximum curves range from 6° to 14° it certainly would greatly prolong the life of tires on locomotives in use on private railroads where the curves are seldom less than 20°.

There are fourteen different forms of flange lubricators now in use on the regular railroads. They may be classed in five classes: (1) crude oil, (2) engine and car oil, (3) solid lubricant, (4) water, (5) exhaust steam.

The Santa Fe Railroad is using crude oil, and the type of lubricator used is known "wood block".

This we believe to be an inexpensive lubricator and no doubt can be made by the Private Railroad owners. There are a number of patent flange lubricators on the market, but they are all quite expensive. Most of them use a solid lubricant. It is claimed by some of the railroads that lubricator using solid lubricant or hard grease loses its merit in either wet or cold weather.

One thing the owner of the private railroad will have to watch, and that is see that the flange lubricator which they may install does not throw the oil on the tread of the tire so it gets directly on the ball of the rail, as should this happen it might cause a slippery track and accidents will occur on the heavy grades.

Any one interested in flange oilers can write to Mr. M. H. Haig, Mech. Engineer, Atchison, Topeka & Santa Fe Ry. Co., Topeka, Kansas, and he no doubt can furnish information on the best type to install. Mr. Haig was Chairman of the Committee on "Flange Lubrication" Master Mechanic's Association, Forty-fourth Annual Convention held at Atlantic City, New Jersey, June 17th to June 21, 1911.

COAL CONSUMPTION IN HEAT UNITS.

A heat unit is the measure that scientists employ to express the quantity of heat dealt with in all scientific and engineering processes. The amount of heat represented ought to be as intelligible to ordinary persons as the weight represented by one pound of the volume of one gallon, but somehow few people understand the details of heat measurement.

One heat unit is the amount of heat required to raise the temperature of one pound of water one degree Fahr. at its greatest density, which is 39 degs. Fahr. In ordinary practice the evaporating of one pound of water at any temperature is called a heat unit. To the ordinary reader that statement does not convey much intelligible information. A heat unit represents the amount of energy needed to perform 778.3 foot pounds of work. As one horse-power represents the energy expended in raising 33,000 pounds one foot high per minute, about 42 heat units represent one-horse power.

Careful experiments have demonstrated that the combustion of one pound of good quality of coal contains about 14,500 heat units, each equivalent to 778.3 foot pounds. If then the heat of combustion of one pound of coal could be employed in raising a weight of one pound it would raise it 14,500 x 778.3 = 112,853,500 feet, or more than 2,100 miles. The proportion of this heat energy, converted into useful work is very small, less than 10 per cent., when used in the very best steam engines. Locomotives very seldom utilize more than 4 per cent. of the heat energy of coal.

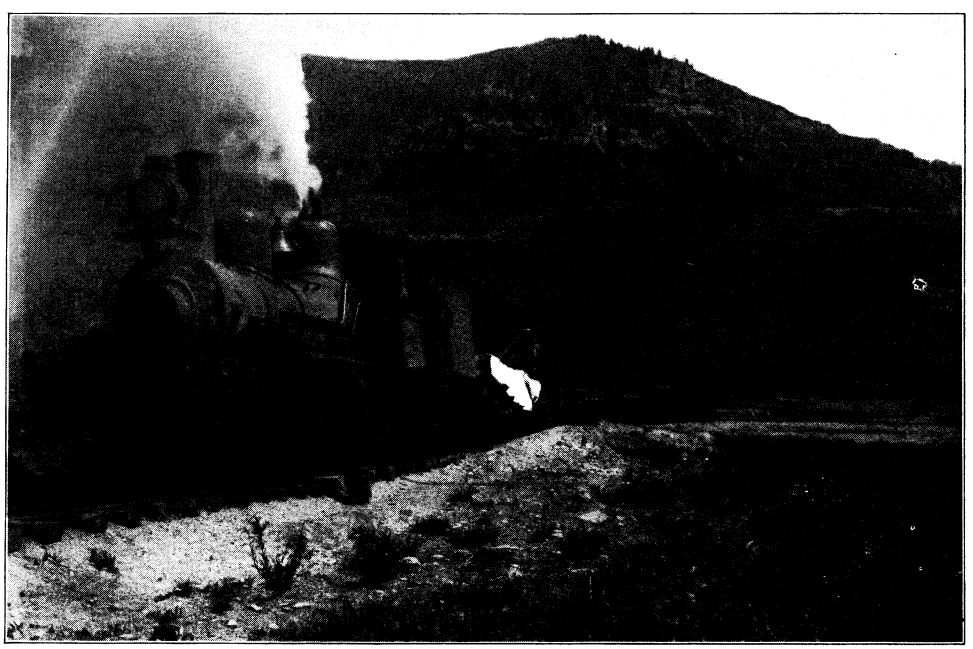
When one gets converting the number of tons of coal used daily or weekly into heat unit figures, the sums become so formidable that we regard them with amazement. For instance, the Erie Railroad uses in its locomotives about 50,000 tons of bituminous coal every week. Any of our readers who enjoy long numbers might work out the sum 112,853,500 x 50,000 x 2,000 = and see how it looks. —*The Railway & Locomotive Engineering.*

ALL WIRE ROPES USED IN OUTSIDE OPERATIONS suffer more or less from oxidation or rusting, and wire ropes running underground are frequently subjected to the corroding influence of water containing acids, which is still more destructive; and it is very necessary, therefore, that such ropes should be properly coated with some suitable material. For ropes subjected only to atmospheric conditions, a good quality of boiled linseed oil, or pine tar thinned with turpentine, will answer the purpose; but for ropes coming in contact with water, and especially with water containing acids, some of the preparations of crude petroleum, or a mixture of this with graphite, should be used.

THE UINTAH RAILWAY

THE UINTAH RAILWAY is a narrow-gauge railroad in western Colorado and eastern Utah. It extends fifty-four miles northward to Dragon from Mack, its southern terminus and junction point with the Rio Grande Western Railroad. Mack is in the broad, fertile valley of the Grand River, twenty miles westward from Grand Junction, Colorado, and, while a small community, is yet destined to grow to considerable importance as a railroad town, surrounded, as it is, by land unexcelled in fertility when brought under irrigation.

Nowhere in the United States has there been a more astonishing result in the irrigation of arid lands and their conversion into beautiful farms than during the past ten years in this valley of the Grand River. From Fruita, seven miles east of Mack, to Palisade, twenty-five miles further east, there is an uninterrupted series of prosperous farms growing all the varieties of fruits and vegetables for which the irrigated Colorado lands of comparatively low elevation are noted. Colorado

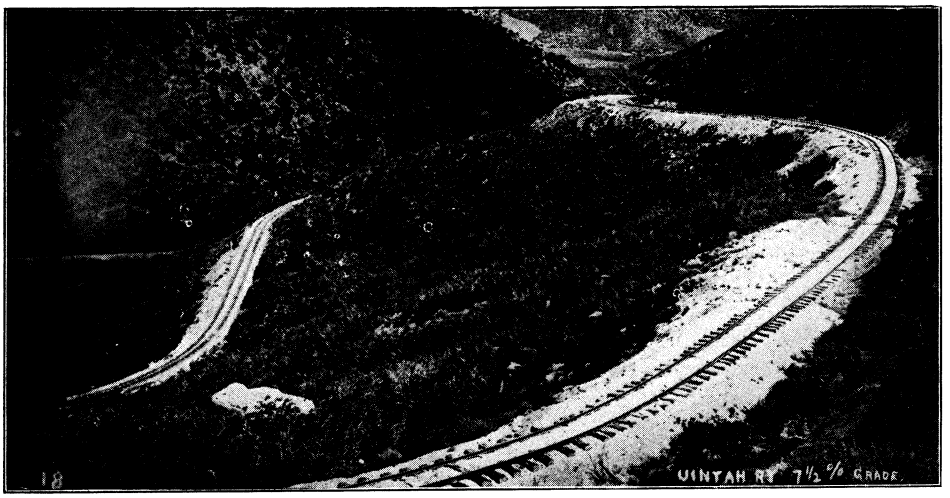


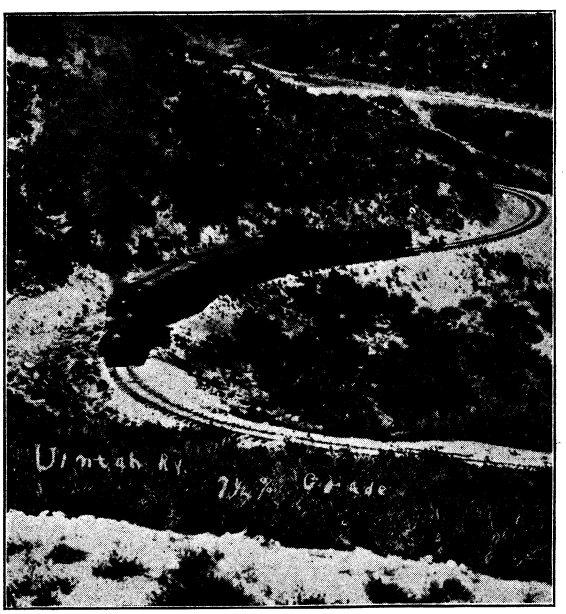
TWO SHAY LOCOMOTIVES WITH TRAIN OF ASPHALTUM ON WEST SIDE WHERE AVERAGE GRADE IS 5 1-2 PER CENT

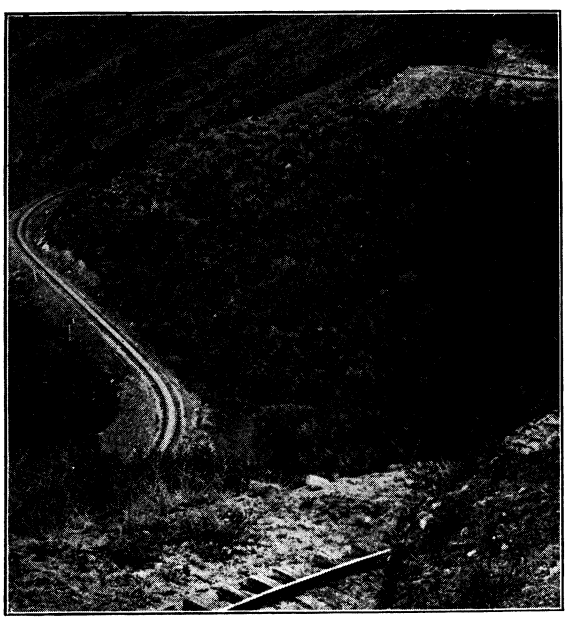
melons have won a well-deserved reputation at home and abroad; those of the Grand Valley are equal to the best. The Delaware peach is surpassed by the peach of the Grand Valley. The apples are famous for their variety and rare qualities. Numerous other fruits are equally successfully grown, as is, of course, the beautiful western clover, the alfalfa or lucerne.

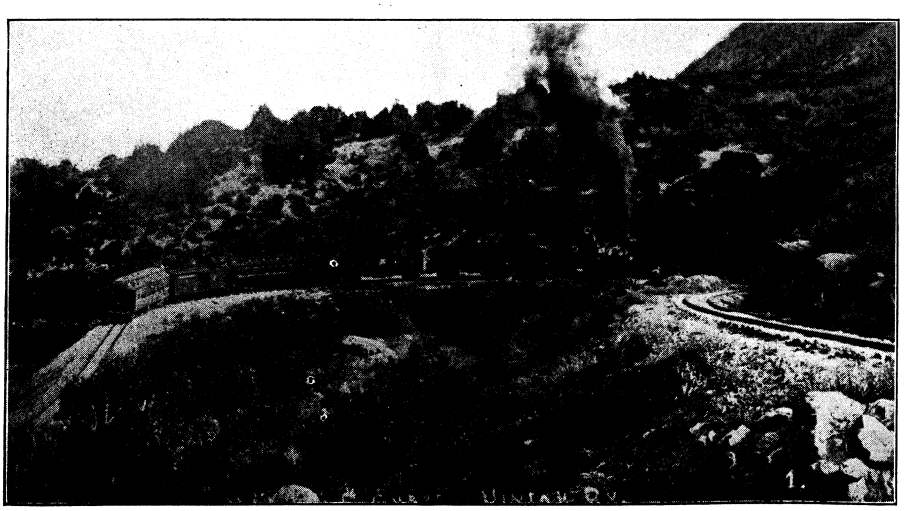
The Grand River is one of the largest streams in western Colorado, carrying an enormous volume of water. An immense irrigating ditch or canal, known as the High Line, to be constructed by the United States Government, is designed to traverse the country immediately north of and to the westward of Mack, bringing all of the neighboring valleys and mesas under irrigation. A smaller irrigating ditch already intersects the valley at Mack. Homeseekers may well give consideration to this area as one possessing many advantages.

Through land such as has been described, the Uintah Railway passes for a distance of twelve miles, at which point it enters a canyon in the foothills of the Book Cliffs, and for sixteen miles on









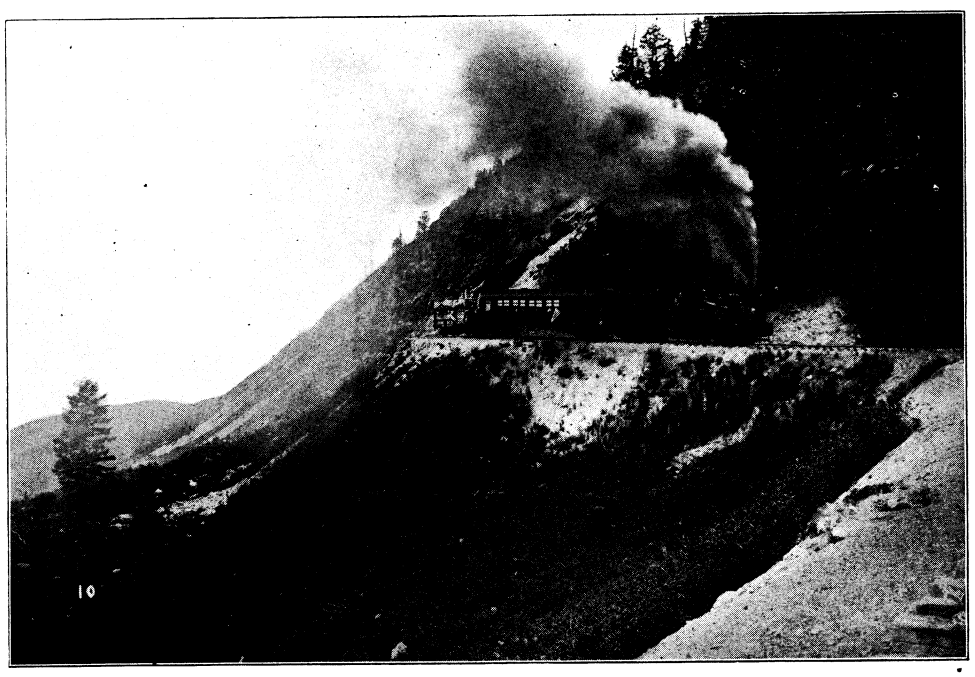
VIEWS ALONG THE UINTAH RAILWAY, SHOWING SOME OF THE HEAVIEST GRADES AND SHARPEST CURVES

a steadily ascending grade it passes through scenery that is strikingly picturesque. The stillness is profound, broken only by the operations of the coal mines at the station Carbonera, eighteen miles from Mack.

At Atchee, twenty-eight miles out, are the shops and round-houses of the railway, at the base of the main range of the Book Cliffs. Here the trains begin their heavy climb toward the summit, with one mile of five per cent. grade, and thence on an uninterrupted grade of seven and one-half per cent., five miles further to the summit. Two thousand feet of elevation is attained in these six miles, by an engineering accomplishment that is unique in railroad enterprise and wonderfully beautiful in the natural characteristics of the country.

The Book Cliffs is a precipitous range extending upwards of two hundred miles in an east and west course from the mountains of Colorado to the Wasatch and Uintah ranges of Utah, crossing the broad valleys of the Grand and Green Rivers like a majestic rampart, and providing an unobstructed view on either side of hundreds of miles.

There are no other nearby mountains to shut off the view, as on other mountain railroads.



EXCURSION TRAIN JUST LEAVING THE STEEP MOUNTAIN SIDE, LOOKING TOWARDS BAXTER PASS, PART OF THE ROAD WHERE PASSENGERS HOLD THEIR BREATH

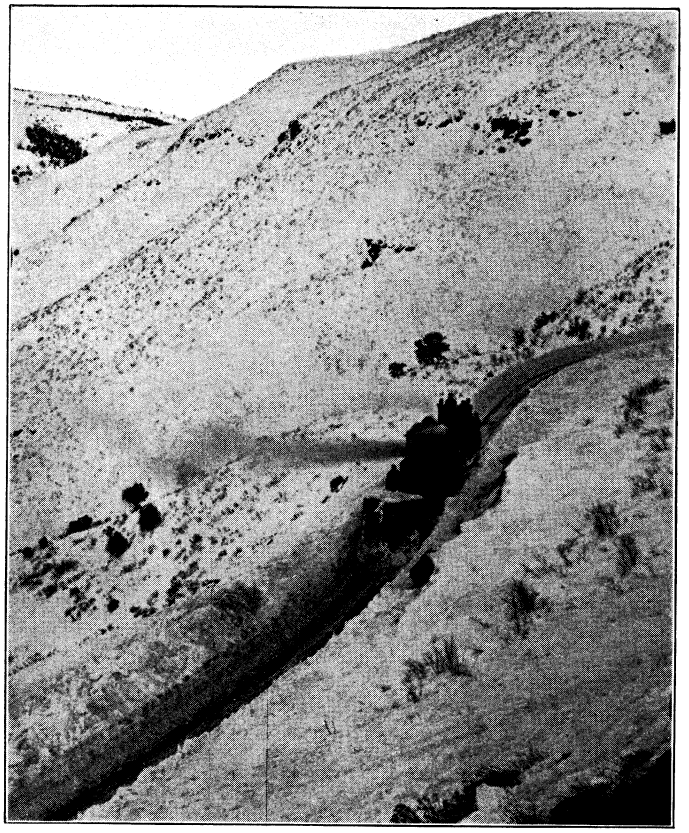
Rising steadily up the face of this great range, there is never a moment when the eye of the passenger may not rest with perfect delight and wonderment upon a gorgeous panorama of slopes below, of valleys and deserts beyond, and of snow-clad mountain ranges in the far-off horizon. To the eastward, the great Continental Divide and the Grand Mesa; to the southeast, the precipitous San Juan mountains of Colorado, one hundred and fifty miles away; to the south, the Sierra La Sal in southern Utah, one hundred and sixty-five miles distant, rising in indescribable grandeur on the hither side of the valleys that lead to the Grand Canyon of the Colorado.

These views from the train windows are best appreciated when the summit is reached at Baxter Pass. Here, simultaneously, another panorama is unfolded on the north, as from the narrow summit the traveler sees the valley of Evacuation Creek stretching out to the Grand Canyon of White River, and, over the old Uncompahgre reservation to Raven Ridge and Blue Mountain on the north, eighty miles away, to Rabbit mountain and the White River plateau, many miles further distant in the northeast in Colorado; over the Uintah reservation and beyond to the Uintah

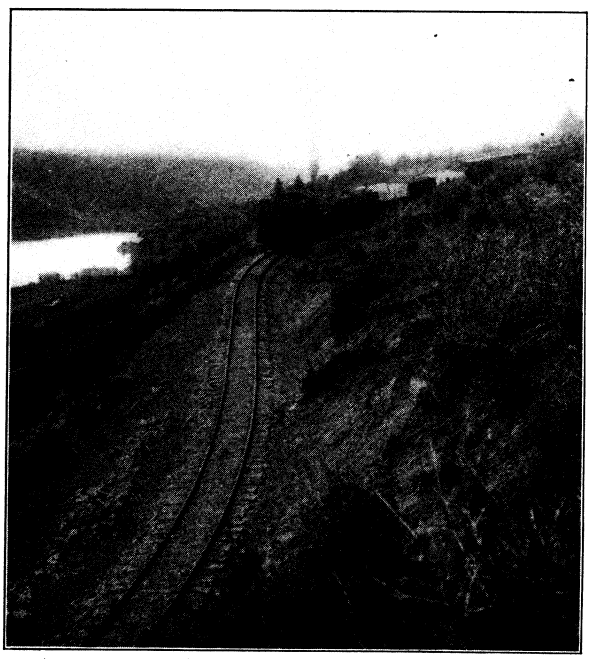
mountains in the northwest, one hundred and fifty miles; the breezes flinging through the pines and aspens on the neighboring summits, the blue vault above and eternal peace in all the atmosphere.

Everywhere there is grandeur, accentuated lights and shadows, marvellous combinations of color. It is soul-stirring, poetic, stimulating, satisfying and a never-ending appeal to the artistic sense.

Along the crest of this remarkable range, among its beautiful trees, by its springs of purest water, are rarest opportunities for those who would have recreation either in bungalow, cabin or tent; to escape the heat of summer, to be lotus-eating in a land of natural romance or, from such a rendezvous, to make tours to remoter fastnesses in search of largest game. Game there is for those that seek it—bear, mountain lion, bob-cats, grey wolves and the black-tail deer, the latter, of course, coming within the workings of the game laws. Old Indian trails, deep-furrowed, lead along the ridges, and wagon roads in excellent condition,



THE SNOW PLOW RETURNING WITH ONE SHAY LOCOMOTIVE AFTER OPENING THE ROAD. THEY HAVE JUST PASSED AROUND "MORO CASTLE CURVE."



ANOTHER VIEW OF TRAIN ON 5 1-2 PER CENT GRADE. PULLED BY TWO SHAY LOCOMOTIVES

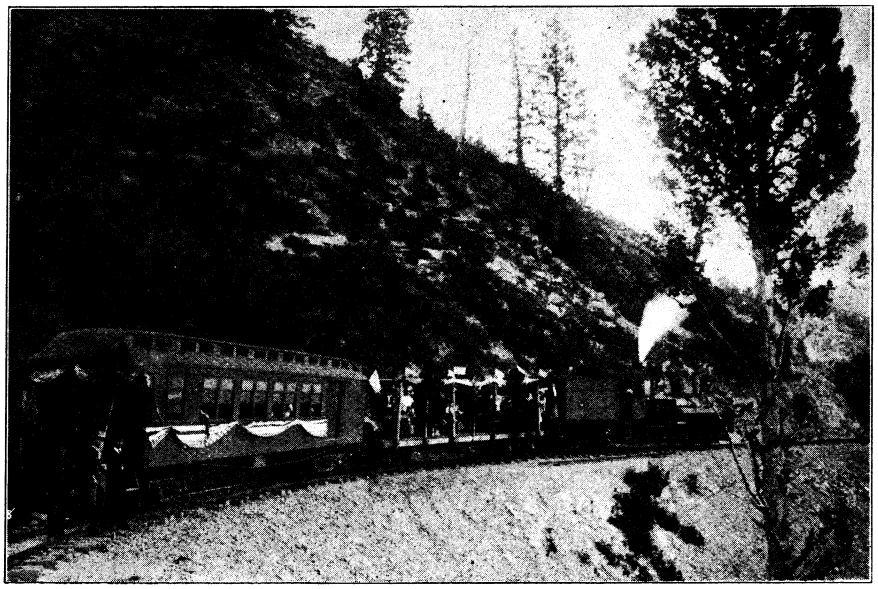
though, like Topsy, they have simply "growed." From these, new panoramas unfold in kaleidoscopic succession.

Who has not heard of the wonderful sunshine of the great inter-mountain country in the West, where there is an almost uninterrupted succession of cloudless days and starlit nights! Who does not love the pleasure of basking in the sunlight in an atmosphere free from humidity, and who does not know that in the combination of sunlight and ozone is the knell of the dreaded bacilli of disease! Out-of-door life in a country such as this will arrest the progress of pulmonary troubles, will rapidly enrich the blood in red corpuscles and, imparting a rollicking sense of joy in living, bring into play a rare combination of agencies for regeneration.

On the northern descent not quite so steep in grade as is the southern slope, the railway winds through alternating groves and parks to McAndrews Lake, an artificial storage reservoir five miles further on, whence the west

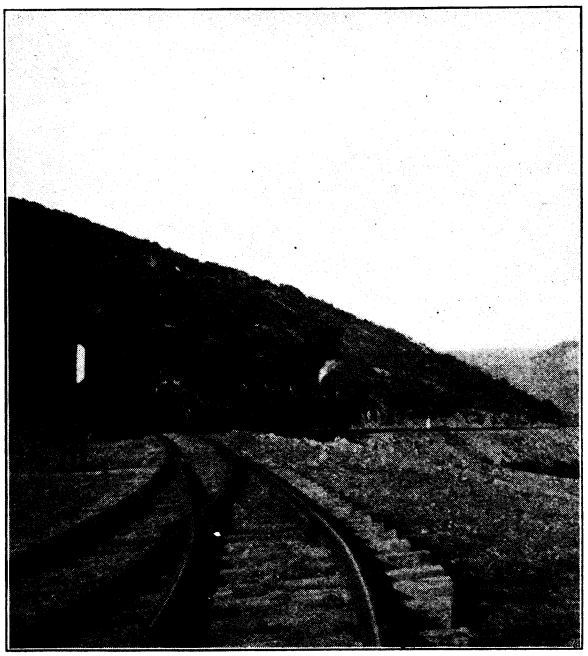
fork of Evacuation Creek leads on by curious hills and canyons to the northern terminus at Dragon.

There are Post Offices at both Mack and Dragon. Dragon is the forwarding point for passen-



A FOURTH OF JULY EXCURSION BEHIND A SHAY LOCOMOTIVE GOING DOWN THE 7 1-2 PER CENT GRADE

gers, freight, express and mail to Rangely and to the lower White River valley in Colorado and, in Utah, to Vernal and the Ashley valley; to the Ute Indian agencies at Ouray and White Rocks; to the United States Military Post at Fort Duchesne; and to the erstwhile Uintah Indian Reservation lying in the valleys of the Strawberry and Duchesne Rivers.

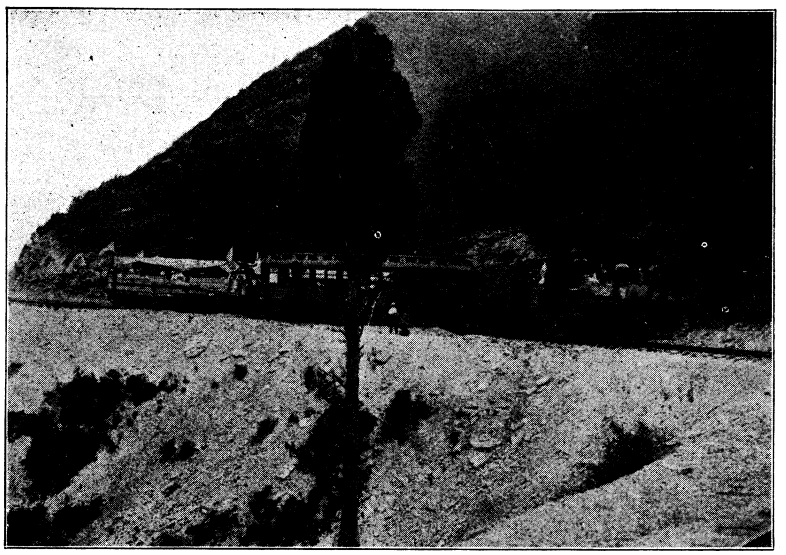


THIS PICTURE SHOWS AN EXCURSION TRAIN JUST TIPPING OVER ON TO THE 7 1-2 PER CENT GRADE GOING DOWN EAST SIDE. ELEVATION 8460 FEET

The Uintah Railway Company, for the convenience of its patrons, has constructed most comfortable hotels both at Mack and Dragon. Harmonizing with the country in which they are placed, they are in what might be termed the Adobesque Renaissance style of architecture, with walls of concrete. The lounging rooms and parlors are equipped with books, current magazines and daily papers, the dining-rooms are most inviting and the bed-rooms models of cleanliness and comfort. Lighted by gas, heated by steam, with the necessary luxuries of tub and shower baths and with most excellent cuisine, there is abundant invitation to both traveler and tourist to not only come, but linger. The railway, hotels and all connecting lines are operated throughout the year.

The Green River Basin, from its southern confines in the Book Cliffs on the south to the Wind River and Big Horn mountains of Wyoming on the north, was once a great inland sea. No other section of the world is so pro-

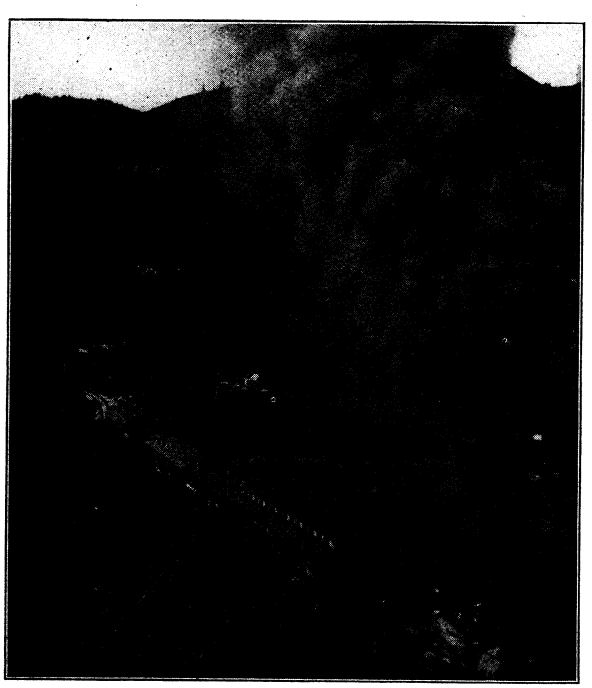
lific in its yield of fossils. Monster saurians, many of them varieties not previously known to exist, have been taken thence to places in the world's museums. Careful and systematic as these inquiries have so far been by Government and collegiate expeditions, they yet have been but superficial. At and around Dragon fossils are scattered in profusion and in great variety. Only a few miles away, resting horizontally in a great rift of rock, lie the vertebræ of an immense snake or lizard fully sixty feet in length. To those whose minds turn with interest in directions such as these, a prolonged stay at Dragon will bring most interesting and profitable results.



SHAY LOCOMOTIVE AND EXCURSION TRAIN STANDING ON THE FAMOUS "LONE TREE CURVE," FROM WHICH POINT SIX TRACKS ARE SEEN BELOW AND A CLEAR VIEW NEARLY 2000 FEET BELOW

Connections are made at Dragon for points beyond by stages and automobiles operated in conjunction with the Railway Company, traversing well-made roads twelve feet in width of easy and beautiful curves and grades. These highways offer experiences that nowhere else are duplicated.

From Dragon, the route follows Evacuation Creek six miles through grey buttresses of lofty hills and mesas to the commodious corrals that the Railway Company has constructed for the convenience of the annual shearing of the vast herds of sheep that are brought to this point for shipment and for the shipment of their wool.



COMPANY OF SOLDIERS ON WAY TO PHILIPPINES FROM FORT DUCHESNE. UTAH; TRAIN ON 5 1-2 PER CENT GRADE ON WEST SIDE PULLED BY SHAY LOCOMOTIVE

Just beyond is the beginning of Evacuation Canyon, to avoid which the road rises rapidly to the rolling ridge above. Here again bursts into view the great expanse of Green River basin, the Book Cliffs and Thimble Rock on the south and west, on the right, Hell's Hole, extraordinary in its ragged labyrinths, and, in the foreground below, the weirdest outlines of weathered sandstone ledges, while the road follows the smooth, undulating surface of the mesa.

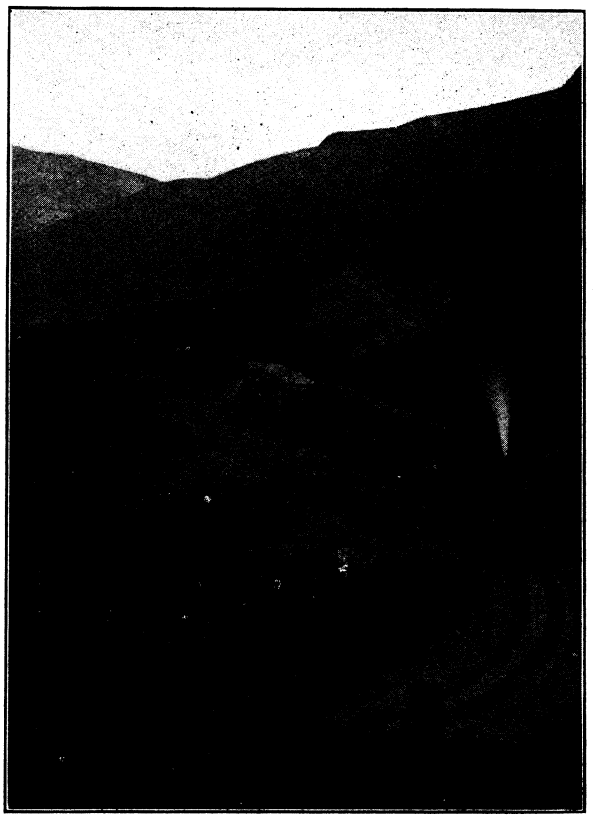
Further on, the crossing of Evacuation Canyon on a well-constructed bridge, the ascent on the other side, and a view of the Canyon to its very bottom as the road stretches out along the western edge. Then a rapid descent into the tortuous Grand Canyon of the White River, its walls hundreds of feet deep, great masses of colors in reds, browns, greys and yellows, all ruthlessly riven, grotesque and terrible, as if they were the troubled dream of a Dore.

As words and pictures can give no adequate

conception of the Grand Canyon of the Colorado, so do they fail in any attempt to express the stupendous vagaries of nature here, for the Canyon of the White River, though on a smaller scale, is a counterpart of the Grand Canyon of the Colorado, the formations are the same and the processes of making all alike. It must be seen to be appreciated; it must be felt to be understood; and once seen, once felt, it will never be forgotten, for the solemn awe which fills the soul of the onlooker may never be effaced.

The crossing of White River at Ignatio is on a two-span truss bridge, whence for a mile the road skirts the bank before entering Valhalla. Here the gods have played sport with mountain sides and tops, and in the echoes throw out again deep chuckles of their mirth. Vast amphitheatres, obelisks, temples, towering pinnacles, all in confusion worse confounded. Owls and ravens silently slip from their perches and flap uncannily off to some remoter resting place.

Four miles from White River brings one again to the upper level of the Green River basin and to the very comfortable Station at Bonanza, where meals are served and where a limited



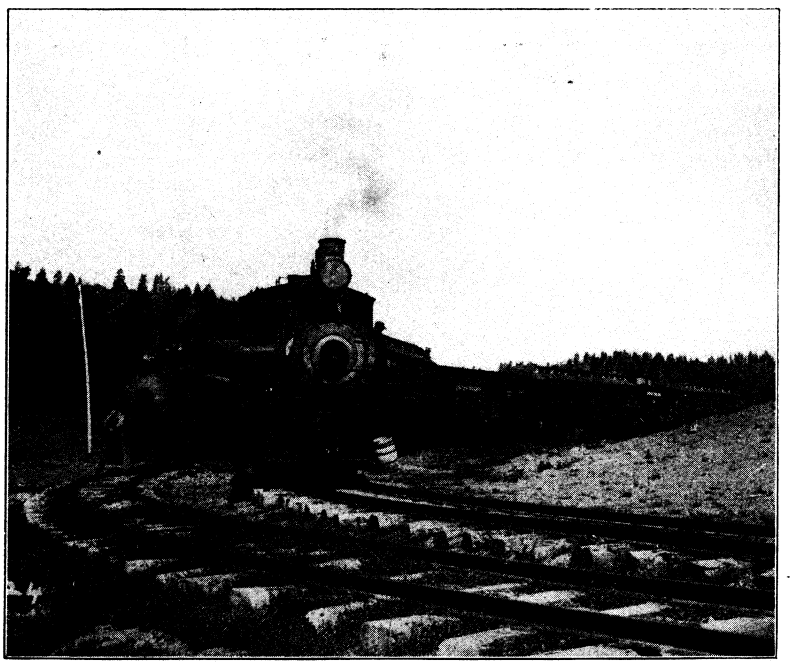
NEAR THE BOTTOM OF STEEP GRADE ON EAST SIDE, SHAY LOCOMOTIVE WITH EXCURSION TRAIN

THIS VIEW SHOWS ONE TRACK ABOVE THE OTHER LESS THAN HALF A MILE AWAY, AROUND THE 7 1-2 PER CENT GRADE

number may find sleeping accommodations, should they so desire.

The road branches at Bonanza, one route leading eastward, crossing White River Canyon again, to Rangely, Colorado; another northwesterly to Vernal and the Ashley Valley, and the third to the Indian agency at Ouray and Fort Duchesne beyond. Leaving Bonanza, the road to Vernal crosses Coyote Basin, —suggestive name—where that restless denizen of the plains, versed in many of the wiles of modern business life, is accustomed relentlessly to harass the droves of sheep, with results that are at once satisfying to himself and impoverishing to the owner. Thence over Dead Man's Bench, of gruesome history, to another hotel and way-station at Kennedy, ten miles beyond Bonanza also a point where the traveler will find most comfortable accommodation. Fourteen miles further on, ferries have been constructed which provide a crossing, six hundred feet in width, over Green River at Alhandra, whence again, by easy grade, the road leads on to Vernal, thirteen miles. Or, from Bonanza, by the Southern route ten miles to a hospitable wayside inn at Chipeta Station, and on to the lower Green River ferry at Ouray, former agency and present tribal center of the Uncompahgre Utes. Thence it is thirteen miles to Fort Duchesne.

THIS PHOTO TAKEN FROM CAB OF A SHAY LOCOMOTIVE FOLLOWING THE SNOW PLOW TO LEND ASSISTANCE WHERE NECESSARY. WHERE THE MOUNTAIN SIDE IS STEEPEST, TOO STEEP FOR ABOUT 800 FEET FOR A PERSON TO DESCEND. THE GRADE IS 7 1-2 PER CENT



SHAY LOCOMOTIVE HANDLING TRAIN OF SOLDIERS ENROUTE FROM FORT DUCHESNE TO PHILIPPINES; GETTING READY FOR DESCENT OF 7 1-2 PER CENT GRADE

Vernal is the county seat of Uintah County and the location of the United States Land Office for all the lands in Uintah County and that part of the lands in Wasatch County that were included in the Uintah reservation. Thus all of what was the Uintah reservation is embraced within the Vernal land district.

Vernal is a most charming town, in the center of Ashley valley, with bank, public schools and well-paved streets. Within a comparatively short radius, there are about eight thousand people. Agriculture is their principal occupation, and wonderful is the output of the Ashley valley

INDEX TO ADVERTISERS AND WHAT THEY HAVE TO SELL.

in its fruits and honey, in the dairy products, live stock and hay and grain. The apple orchards are fair to look upon and bear such fruit as will cause great surprise. An apple twelve inches in circumference is no uncommon thing and so richly are the branches laden that props are often used to save them from destruction.

The streets and all the highways in the valley are fringed with trees, as one may see in Holland. Brooks of clear running water skirt the roadsides. The purple blossom of the deep green alfalfa fills the air with fragrance, yielding the bees unspeakable delight. It is a garden spot of not many years' existence, once wholly arid, and now an enchanting Vale of Cashmere.

The soil values of this extraordinary country lie in the great depth, varying from ten to fifty feet, of an absolutely homogeneous product of disintegration of the hills. The process has been complete, mechanically and chemically, with a resultant material that is most perfectly adapted for cultivation, and that, because of its great depth, is practically inexhaustible. The annual precipitation of twelve to sixteen inches of rainfall is, of course, in itself inadequate to the farmers' needs. But instantly the streams are tapped by ditches and canals and a well-regulated flow of water is applied, fertility is accomplished and in a bountiful degree. Not only do the irrigating ditches supply the needed moisture but in the very water which they carry there are, in solution, those mineral constituents which unceasingly fertilize and revivify the ground, though that indeed may never seem a need for several generations.

The Uintah Indians, so-called, are the living representatives of what were once the Uncompahgre Utes and the White River Utes of Colorado. Some twenty years ago they were, by treaty, moved from Colorado into Utah. The current year has brought about the completion of those processes by which Congress and the Interior Department have wiped away the exclusive Indian domain, allotting lands in severalty to each one of the members of the Tribes and placing the remainder subject to entries under the land laws of the United States. The allotment of lands to the Indians gave eighty acres to the head of each family, and, to each other member of a family, an additional forty acres. Thus approximately 300,000 acres have been allotted, leaving, it is said, 2,000,000 acres, a considerable portion of which can be brought under irrigation, to be restored to the public domain.

The Indians are most peaceable in manner and habits of life, have adopted citizens' garb, in some instances speak English, and will, many of them, avail of the opportunity to work for wages. They have made advances in the understanding of farm operations and the methods of irrigation.

A Military Post of the United States Army is located at Fort Duchesne, at the confluence of the Uintah and Duchesne Rivers.

In the vicinity of Fort Duchesne, new towns have sprung into life, called Moffat, Myton and Leland, the attractions of which will be cheerfully expounded on the ground by those who have become convinced that these will be of the important, if not the most important, new towns that the opening of the reservation will bring into being.

The altitudes within this country range from about five thousand feet at Fort Duchesne to a little less than six thousand feet at Vernal, and to higher altitudes attained on the mesas as the rivers are followed toward their source. Except in the very highest of the mountain ranges, the seasons are normal in their length and temperature, the snowfalls of winter light, the degree of cold not excessive, and, as it is true of all mountain atmospheres, most easily and pleasantly borne.

Telegraph and telephone service along the line of the Uintah Railway Company connects Fort Duchesne, Vernal, Rangely, Bonanza and all intermediate points with Mack and distant cities. There is daily carriage of mail and express in both directions. Goods by freight are brought from Dragon to Vernal and Fort Duchesne in rapid transit freighting outfits with promptness and despatch, in less than four days' time.

The equipment of the Uintah Railway consists of the most modern types of Baldwin and Shay locomotives, of Pullman cars and standard coaches, of observation cars and gasoline track automobiles.

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